

# Use of Medical Services and Facilities by Welfare-Supported Children

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FAMILIES supported by welfare funds, in both their need for medical service and in the way in which they use medical facilities, may be expected to reflect the needs and attitudes of the social environment from which they originate. They also reveal both the premium they place on health care and their personal health expectations. Relatively little is known about clinical needs and the health values of the socioeconomic groups that include most of the dependent families in the community. Their different attitudes toward positive health challenge the community services, whose generally passive role has been to allow these families entry to available facilities and nothing more.

## Methods and Materials

The 1961 and 1962 records of 250 children were drawn at random from the files of the welfare departments of a core community and a rural city in Massachusetts and examined to assess the patterns of demand and need and to see how far these patterns may be modified by the different environments. The children were from 90 families, 50 supported by Aid to Families with Dependent Children (AFDC) and 40 by General Relief (GR) services of the cities. The AFDC children were subdivided into those receiving support for the 2 years of the study period and those receiving support during only

part of the study. Together with the GR children, they formed six subgroups, with mean ages varying from 5.33 to 9.68 years. An examination comparing the needs of the children at different ages showed no evidence that use of the medical services was radically affected by their ages, which varied from newborn infancy to 18 years.

Both communities provided a free choice of practitioner or hospital, and it was chiefly through the system of vendor payments that the frequency and extent of medical care was studied. An exception occurred for one subgroup of GR children in the rural city who received minimal care from a salaried physician, and the records of his services were included in this study. Differences that might affect medical needs and patterns of usage appeared on the whole to arise from basic differences in the communities themselves.

Thus while the cities differed little in population size (urban 95,000, rural 58,000), the first city was at the core of a large multiple conurbation while the second was alone and self-contained at the center of a rural area. The core city contained older and less well-maintained housing and had a predominantly poor or lower middle-class population, centered on retail and service trades; the rural city contained evenly divided social groupings, largely influenced by a prosperous technological industry. The significant ways in which the core city differed from the rural city, as shown by the 1960 census, lay in its 16 times density of population, its twice the rate of foreign-born residents, its half the ratio of college graduates, and its lack of the more prosperous income

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groups. Such differences would probably be accentuated if the core city were compared with a suburban community in the same metropolitan area.

Outmigration, as might be expected, was a characteristic of the core city, and the net loss represented one-fifth of its population within 10 years. However, though in terms of prosperity the two cities were different, in poverty they were similar. The paradox occurred when the indexes were examined for the ratios of unemployment, low family income, and high school dropouts—the same at-risk factors of a socioeconomic group common to both cities.

Differences in basic medical facilities within the two cities were fairly obvious. The rural-centered city contained 3 voluntary hospitals providing a total of 60 pediatric beds, backed by the services of 32 hospital residents of one kind or another. In contrast, the core city had one small voluntary hospital with 16 pediatric beds and only 3 hospital residents to serve a population of almost 100,000. The rural city also was well provided with pediatricians, practitioners, and hospital specialists, while the core city depended entirely on a dwindling supply of aging general practitioners.

However, differences, especially where indigent families are concerned, can be more apparent than real. Even guaranteed vendor

payments do not actually insure that socioeconomically unfortunate families are able to benefit entirely from good facilities and well-trained personnel. In both cities a large proportion of medical care was derived from the same services the families would have used without vendor payments; that is, the hospital emergency rooms, the free clinics when provided, and the less-demanded general practitioners. In addition, the core city had at its disposal the teaching hospitals within adjacent communities.

### Results

The 1961 and 1962 records of services and vendor payments were analyzed for each of the 250 children. Although chosen at random, the records showed that the mean age and period of exposure to welfare support differed little for the children from the two cities. All the long-term AFDC families had received care throughout the 2-year span of the survey and the GR families in both cities for a mean of a little more than 12 months, while the group of transient AFDC families had mean care periods of 6 or 8 months. In calculating annual costs and sickness rates, a correction was applied to each group to bring theoretical exposure time up or down to exactly 12 months, which allowed comparisons between the six groups. There was a tendency toward "weighting" of the long-term-assisted families with older children.

**Table 1. Comparison of mean annual sickness rate and percent distribution of general medical services between welfare-supported children in a core community and in a rural city, by source of care**

Welfare-supported children	General practitioners		Pediatricians		Hospital emergency room		Pediatric clinic		Total	
	Sickness rate	Percent of care	Sickness rate	Percent of care	Sickness rate	Percent of care	Sickness rate	Percent of care	Sickness rate	Percent of care
Long-term Aid to Families With Dependent Children:										
Core city	2.97	71.2			1.20	28.8			4.17	100
Rural city	.65	50.0	0.32	24.6	.22	16.9	0.11	8.7	1.30	100
Transient Aid to Families With Dependent Children:										
Core city	2.28	63.5			1.31	36.5			3.59	100
Rural city	1.20	33.3	.96	26.7	.96	26.7	.48	13.3	3.60	100
General Relief:										
Core city	.66	66.7			.33	33.3			.99	100
Rural city	.64	50.0	.06	4.7	.25	19.5	.33	25.8	1.28	100

However, mean sickness rates differed little at different ages, and age correction finally was discontinued. A California report in 1961 (1) also confirmed that the age of children influences medical costs relatively little.

Table 1 is a record of the mean sickness rate per child per year for the long-term and transient AFDC and the GR groups and shows the source of care. Although the amount of service received by each of the 250 children can be assessed with ease from vendor payments, the records of diagnoses and spans of illness were often incomplete. Reported visits to a specialist obviously indicated continued care; and widely spaced single visits, unrelated to routine health care, to a general practitioner indicated different episodes of minor illness. In borderline cases without guiding information, it was arbitrarily judged that repeated visits within a 4-week period were likely to be for the same illness, while discontinued service more than 1 month apart was a sign of new health problems. It had been anticipated that well-child visits might cloud the record, but both these and the unenforced health checks nominally required of supported families were so infrequently obtained that they proved to be statistically negligible.

The annual costs of providing comprehensive clinical services in the two cities varied between \$32.36 and \$118.78 per child depending on the category of care. Costs tended to be considerably higher in families soon after care was started, and both welfare departments apparently expected new families to have a backlog of medical problems requiring attention. How-

ever, even in families given longer support, a few expensive hospital admissions could radically alter the costs for the whole group. The way in which these costs were distributed for the AFDC-supported children is shown in table 2. During this period, the mean annual costs for vendor medical payments in Massachusetts varied around \$60, though national figures (2) revealed that actual annual payments to recipients tended to be higher than the mean costs for each AFDC-supported child.

Lester (3) has noted that vendor medical payments for the recipients of public assistance increased nine times in the 10-year period ending in 1963. About one-third of the increase was attributed to rising medical costs. However, though AFDC families composed half of all public-assistance recipients they accounted for only 8 percent of the huge increase in service during that decade. The \$60 mean annual payments for AFDC children in Massachusetts considerably exceeded the national mean of \$22.80 per annum, and table 2 shows how the differences in cost in the two cities reviewed in Massachusetts have been largely accounted for by great increases in dental and other specialist services and rather less in proportion, though still more in fact, in hospital and physician services. Actual costs will, of course, vary according to the local agreements on fee schedules, though these tend to be at least consistent throughout a State. However, provided that similar conditions of free access to medical facilities exist, the analysis of vendor payments is of value for its record of the cost and type of care obtained.

**Table 2. Percent distribution of medical costs in Aid to Families With Dependent Children**

Source of care	National <sup>1</sup> 1963	Core city, Massachusetts		Rural city, Massachusetts	
		Long term	Short term	Long term	Short term
Hospitals .....	46.1	31.8	68.6	26.8	74.9
Physicians .....	21.5	18.0	13.9	18.9	9.6
Dental .....	9.8	26.5	2.3	32.9	3.0
Drugs .....	14.1	20.2	13.2	10.1	8.4
Other .....	7.5	3.4	1.9	10.4	4.1
Total .....	98.0	99.9	99.9	99.1	100.0

<sup>1</sup> Reference 3.

<sup>2</sup> Includes ophthalmic services.

For GR families in the two Massachusetts cities, the costs of services tended to be low; that is, they appeared to resemble costs for long-term AFDC families—but this was largely an artifact. The way in which GR families used facilities paralleled their use by short-term or transient AFDC children; that is, a large proportion of the care was expended on hospital in-patient illness.

The pattern of general medical care and the distribution of illness between the general practitioner and the pediatrician on the one hand and the pediatric clinic or the hospital emergency room on the other is shown in table 1. In this particular instance, the rural-centered city provided the family with a wider choice of facilities. With pediatricians generally available, the families made one-third or more of their medical visits to them. However, the core-city children had a considerably greater call for the general medical services. For instance, the families that were supported for long terms had three times as much apparent sickness and obtained three times as many prescriptions as their rural counterparts. Their dental costs were double, and they were twice as likely to be admitted to hospitals. In addition, the drugs prescribed in the core city cost twice as much as in the rural center.

The pattern of demand of these long-term-supported AFDC children spans the range described by Muller (4), within which children from families with incomes under \$2,000 made 1.6 visits per year to physicians compared with 5.7 for children of families in the highest income bracket. The most one could conclude from the Massachusetts cities is that the supported children in the core city, when the facilities were available to them, made the same number of demands for services as children of the upper-income families. The more recently disturbed families, that is, those most recently taken into welfare care, appeared to resemble the poor families described by Muller. This was especially true of the GR families: the longer the medical care was available, the more the demand for it approached the patterns of the more affluent class. However, this analogy is not sustained, for the poor continue to use the hospital emergency room in the same ratio. Nor is the analogy sustained for the long-term-supported

rural families, with their apparent demand for high-cost, low-quantity service.

None of the differences between the two Massachusetts communities could be positively ascribed to differences in the availability of medical services. It might be argued that the better the services the community makes available the less likely it is that problems will recur. The more readily the facilities are made available, the less they might ultimately be called upon. Such hypotheses could be applied to the rural center, for the longer the families remained under care the less expensive their general medical costs became. Money tended increasingly to be needed for the type of service requiring less emergency care, such as dental and ophthalmic services, and even these particular needs tended increasingly to be cosmetic. It might indeed be accepted that the more broadly based the medical care provided the smaller the associated call would be on the general medical and hospital services.

It is tempting to carry the argument into preventive services. Here the two test towns also differed. The rural-centered city, with its more sophisticated curative services and clinics, was also the one providing free well-child care through full-time practicing pediatricians. As only 29 of the rural city AFDC-supported children were of preschool age, the breakdown into those who did or did not use well-child clinics regularly is of limited value. It was, however, interesting that whereas each of the 11 children who regularly attended well-child clinics visited the hospital emergency room a mean 0.45 times a year, the 18 children who were poorly supervised or unsupervised visited the emergency room a mean 1.44 times annually.

### Discussion

It was not the primary aim of this survey to test differences in the two towns in Massachusetts but to see how far the examination of vendor payments for 250 children supported by the local welfare departments could be a useful tool in assessing their health needs and experiences. Winston (5) has suggested that more pilot studies in State and local settings are needed. In this particular instance it would appear to be valid, if only to indicate the mass of potentially significant material lying in the rec-

ords of the community health and welfare agencies. As would be expected, the costs and apparent needs of the children varied widely, but these variations were relatively little influenced by the age of the children.

In the end, the differences that did emerge reflected the differences in the communities themselves and further emphasized the aphorism that the most needy communities tend to have the least adequate facilities for coping with their problems. Welfare-supported children in the more favored rural community not only had a better diversity of services to call upon but also had a smaller backlog of recurring health problems trailing throughout the years of welfare dependency. Perhaps the rural children had better health in the first place, but there is no real evidence of this. In fact, they readily used the dental and ophthalmic services when freely available. The conclusion remains that the better the underlying community health services the less would be the per capita cost of keeping indigent children healthy.

The evidence that unsupervised children used hospital emergency rooms three or four times as often as health-supervised children is not statistically valid. But for the whole group of 250 children, the evolution of the hospital emergency room as an important source of general medical care was significant. Between 25 and 40 percent of the sick children were taken directly to the hospital regardless of the free availability of general practitioners and pediatricians. This is a trend not limited to indigent families. But it was noticeable in the rural-centered families that the provision of even a limited hospital-based pediatric clinic could siphon off nearly half of the emergency room calls.

The conclusion about the way in which low-income families use medical services may need revision. The classic picture described by Pond (6) presents these families as low users of preventive, pediatric, and dental care services. With the free availability of medical facilities, two divergent groups may be emerging. The first uses medical facilities at least in similar quantity to upper income groups, while the second continues, in the narrow pattern of interest, to use medical services only during emergencies.

It would appear that the Massachusetts families are looking inevitably to the hospital as the primary source of their care, but it also would appear that this demand could be channeled by the hospital itself into better-equipped specialist services, staffed by personnel specifically trained for the care of children. On the negative side, as far as well-child supervision is concerned, the free availability of pediatricians, general practitioners, and well-child clinics still attracted less than half of the indigent welfare-supported families. The other families turned most frequently, with seemingly acute medical problems, to the hospital emergency room.

### Summary and Conclusion

The use of vendor payments over a 2-year period has been studied in a core community and a rural-centered city in Massachusetts to assess the health needs and effectiveness of community resources for 250 welfare-supported children. It would appear that the facilities in both cities had to be easily available to eligible families before they were fully used by them. It then became evident that many children coming for care for the first time did so with a long backlog of untreated illness. The increasing availability of facilities still was accompanied by a fall in the incidence of chronically recurrent illness, and the demand for care became more a desire than an emergency.

Not all the differences could be ascribed to the children's origin from the rural-centered city on the one hand or the core community on the other. The core city certainly had many more repeatedly sick children, at increasing cost. In the rural center, costs for the long-term care of children became significantly reduced the longer the children received care.

The evolution of the hospital emergency room as an increasing and at times major source of general medical care was related only in part to the availability or unavailability of alternative facilities. This demand could quite easily be channeled into more appropriate hospital-based pediatric clinics. Whatever provision was made, however, in the absence of an active home-supervised program, a significantly large number of families failed to use any facilities except in emergencies. It would appear

that these families had much more real or assumed illness than their better organized contemporaries who used the facilities regularly.

The best community health services are not necessarily the most expensive if they are accompanied by a reduction in chronic or recurrent illness. The significant number of totally uncared-for children will remain despite the provision of good hospital, clinic, or office-based facilities. Something more than the provision of medical facilities may be required to insure that the children in low-income families receive the care they need. The study of vendor payments for the medical care of welfare-supported children gives valuable information on the effectiveness of these community resources and the underlying needs of the families the facilities aim to assist.

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### Bovine Leukemia Study Awards

Public Health Service awards of more than \$1.25 million will finance eight studies of leukemia in cattle, part of the special virus-leukemia program of the National Cancer Institute.

Prompted by recent reports of virus-like particles in cow's milk obtained from an experimental herd with a high incidence of leukemia, the studies will determine if these particles represent viruses, if they are causally related to leukemia in cattle, and if they are similar to viruses known to cause leukemia in laboratory animals. The possibility that these particles are related to human leukemia is minimized by the relatively small number of leukemia cases, 17,000 per year in the United States, compared with the millions of persons who drink milk regularly.

Four studies will attempt to induce leukemia in cattle by inoculation with milk and tissue preparations from leukemic animals, by nursing calves on these animals, or by inoculation with Moloney and Rauscher viruses, agents causing leukemia in laboratory mice and rats. These studies will be done at the University of California at Davis, the University of Minnesota, and the University of Pennsylvania.

Three projects will isolate and determine the virus-like particles in cow's milk; prepare a reference document on the characteristics of bovine leukemia; and develop new cell cultures of bovine thymus, spleen, leukocyte, and bone marrow tissues. These studies will be conducted at the University of California at Berkeley, State University of New York, and South Jersey Medical Research Foundation, Camden.

Another study at the Public Health Service's Robert A. Taft Sanitary Engineering Center, will determine if present pasteurization procedures involve sufficient heat and time to inactivate six known viruses added to dairy products used in experiments.